The author described some preliminary work carried out in connection with the determination of the dielectric constants of liquids.

The Influence of a Static Charge of Electricity on the Surface Tension of Water: By Edward L. Nichols and John Anson Clark.

The authors used a dropping apparatus for determining the surface tension, and a novel electrometer for measuring E. M. F. This electrometer consisted of a light conducting sphere suspended by a long conducting fibre near a large plane plate. The movement of the sphere was observed by means of a telescope.

Determination of the Specific Heats of Nitrogen by Adiabatic Expansion: By W. S. Franklin and L. B. Spinney.

The authors pointed out the fact that of the four quantities R (in the equation $pv = Rt$), K, C_p and C_v associated with a gas only two are independent; and they described some incomplete experiments for the indirect determination of C_v.

The Analysis of Vowel-sounds, by Means of the Sympathetic Vibrations of a Rigid Body: By L. B. Spinney.

The author described the manner of mounting a light mirror so as to vibrate with sound waves impinging upon it, and exhibited a number of photographic tracings.

Polar and Interpolar Effects of the Galvanic Current on Living Animal Tissues: By C. P. Hart.

Description and Exhibition of a Portable Apparatus for Recording Curves of Alternating Currents and Electro-motive force: By H. J. Hotchkiss.

The author exhibited the apparatus, and also, some photographic tracings taken by means of it.

The discussion of Nomenclature and Units was made a special order for the last Sectional meeting, but on account of lack of time it was deferred and made a special order for the meeting of next year.

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THE PHYSIOLOGY OF COLOR IN PLANTS.

Since the preparation of my recent summary of the uses of color in plants* the work of Stahl in the botanic garden at Buitenzorg has been published,† by which some of the current conclusions are seriously modified.

I have pointed out in the paper cited above that the theories concerning the relations of plant colors to animals are by no means on a secure basis, and Stahl by a large number of experiments in which red and green leaves were fed to snails, rabbits, antelopes, etc., finds that the choice of food depends on the degree of hunger of the animal to a much greater extent than on the color of the plants eaten. He concludes that in no instance is it placed beyond doubt that color areas have been developed as a 'warning' to serve as a protection against animals, but is disposed to regard the so-called warning devices as accidental.

Because of the prevailing acid reaction of red leaves, this author uses the term 'Erythrophyll' to denote the reddish coloring matter, instead of 'Anthocyan.' So far as its physical qualities are concerned, he confirms the view of Engelmann that its spectrum is complementary to that of chlorophyll. He does not, therefore, agree with the theory of Kerner that color layers may serve as a protection of the chlorophyll against intense sunlight,‡ but formulates an extended and modified statement of Pick's conclusions,§ in which he sug-

* MacDougal: Physiology of Color in Plants. Pop. Sci. Monthly, May, 1896.

† Ueber bunte Laubblätter. Ann. d. Jard. Bot. Buitenzorg, 13: 137–216. 1896.

‡ Pflanzenleben, 1: 364. 1890.

§ Bot. Centralblatt, 16: 1883.

gests that the color layers act as a screen for the conversion of light into heat, useful not only in the trans-location of the carbohydrates, but also in all metabolic processes. Such a use is subserved in alpine plants; in those of eastern North America, in which the climatic conditions are alpine; in the pistils of anemophilous plants, to promote the growth of pollen tubes; in extra floral nectaries, to accelerate the metabolism of the carbohydrates, and in many adaptations in the Cryptogams.

Reasoning from the fact that a large number of plants growing in shady moist situations, and in the tropics where the air is much warmer than the leaves, are provided with erythrophyll, absent from specimens under the opposite conditions, he substantiates and extends the idea of Kerner that the color in these instances is a device for promoting transpiration.

Further, the colors of young shoots and leaves act in the same manner, and, by increasing the amount of water conducted to these parts, secure a greater supply of nutritive salts.

It is but proper to say, however, that this method of reasoning does not explain in any adequate manner the autumnal colors, nor of course the occurrence of colors in external hairs, or in the internal tissues, where no relation, or no useful relation, to light can exist.

By far the most interesting portion of the paper is that in which the results of the investigation upon the whitish or silvery patches due to air cavities underneath the epidermis of leaves of Begonia, Dracæna, etc. It was found that if the under side of such leaves were coated with some substance easily melted, such as cocoa butter, and the upper side exposed to light or heat, the portions of the leaf under the silvery areas were less easily heated, and consequently less easily cooled, than the neighboring green areas.

This device retards chlorophyll action, but under the cool, damp conditions in which such plants are found it promotes transpiration by preserving a temperature higher than the surrounding atmosphere.

The velvety appearance of many leaves is found to be due to the papillose extension of the epidermal cells in such form as to act as lenses in entrapping rays of light or heat striking the surface at any angle, thus securing an additional aid to transpiration.

The chief results of the paper may be summarized as follows: The existence of 'warning' colors is not proven; the conclusion of Pick that leaf-red converts light into heat, useful in translocation of carbohydrates, is broadened to include the general metabolism of the plant in its application; the 'protection' theory of leaf-red by Kerner is refuted in great part; the conclusions of Kerner as to the uses of leaf-red as a means of promotion of transpiration are extended and substantiated; and the silvery white as well as the 'velvety' appearance of many leaves are to be regarded as means for the promotion of transpiration under different circumstances.

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CURRENT NOTES ON ANTHROPOLOGY.

MORTUARY CEREMONIES.

PROPERLY studied, the mortuary ceremonies of tribes offer one of the most productive fields of ethnologic research. A valuable contribution to this branch has lately appeared in Dr. W. Caland's *Die Altindischen Todten- und Bestattungsgebräuche* (pp. 191, J. Müller, Amsterdam, 1896). Its investigations are based on a close collation of the rituals for the dead in the various Vedas and other sources, a number of them still in manuscript. The earlier researches of Colebrooke, Wilson, Max Müller and others have been considered, and extensive additions to their studies are